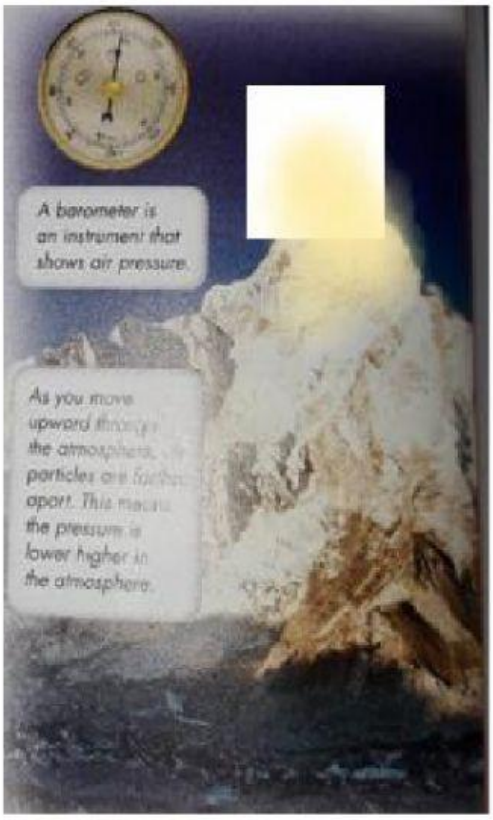
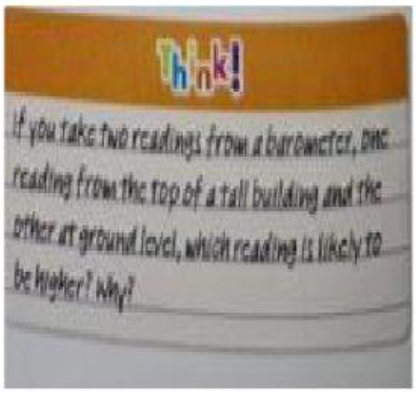
4 **Read and circle three gases that make up the atmosphere. Then underline what happens to air pressure as you go higher into the atmosphere.**

Barometric Pressure



When you look up on a clear day, you see a blue sky. You are really looking through 9,600 km (about 6,000 mi) of air. The blanket of air that surrounds Earth is its **atmosphere**. Like other matter, air has mass and takes up space.

Air is made up of a mixture of invisible gases. Over ¾ of Earth's atmosphere is nitrogen. Most of the rest is oxygen, but small amounts of carbon dioxide gas are also present. The part of the atmosphere closest to Earth's surface contains water vapor. The amount of water vapor depends on time and place. For example, air over the ocean or a forest has more water vapor than air over a desert.



Gravity pulls the mass of the air in the atmosphere toward Earth's surface. The pushing force of the atmosphere is called **barometric pressure**. Air pushes with equal force in all directions. Many kilograms of gas are pressing down on your school building.

They do not crush it because the air inside the building exerts pressure, too. Air pushing down is balanced by air pushing up and sideways. Air pressure decreases as you go higher in the atmosphere.

5 **Look and circle the part of the mountain where the air pressure is the lowest. Discuss why with a partner.**

6 **What would happen if the air outside the hot air balloon were as hot as the air inside? Read, look and discuss with the class.**

Temperature

Air temperature also affects weather. As the sun warms Earth's surface, air that is in contact with the surface becomes warmer. As the air particles move farther apart, the air pushes down with less pressure. The warm air rises, causing an area of low pressure to form, and air from areas with higher pressure rushes in. if the air near Earth's surface cools, the particles in the air become more closely packed. This denser, cooler air pushes down with more pressure. An area of high-pressure forms. Air from this area flows into lower-pressure areas. The temperature of the air also affects the type of precipitation.

7 **Read and underline what a jet stream is. What happens in Canada in the summer Circle the correct answers.**

Wind is air movement caused by differences in pressure. In general, air moves from areas of high pressure to areas of low pressure. When you let air out of a balloon, air rushes from inside the balloon where pressure is higher to where pressure is lower outside the balloon.

Wind speed and direction affect weather. Jet streams can affect local weather. A jet streams is a narrow band of high-speed wind. A polar jet stream blows from west to east high in the atmosphere over North America. in the winter, it can take cold air from the north as for south as Kentucky. In the summer, it takes warmer air north into Canada.

A wind is named based on the direction from which, it blows. A north wind comes from

The north and moves toward the south.

a) A jet stream blows from west to east?

b) Cold air blows in from the south.

c) A jet stream blows warm air from the south.

d)Warm air blows from Canada to Kentucky.

8 **Look and draw an arrow on the wind vane to represent a southeasterly wind. The direction of the arrow shows the direction the wind is coming from.**